Listing of Claims

The following listing of claims is intended to supercede all previously filed listings of claims. Changes are shown with deletions in ~~strikethrough~~ and additions underlined.

Kindly enter the following amendments to the claims:

Claim 1 (Cancelled).

Claim 2 (Currently Amended). A method for storing and updating information in a network having *n* hierarchical levels, said method comprising the steps of:

defining a root node positioned in a first of said levels, said root node having no parent node and at least one child node;

defining at least two leaf nodes positioned within ~~in~~ an *n*th of said hierarchical levels, each of said leaf nodes having a parent node and no child node;

defining a corresponding path between each of said at least two leaf nodes and said root node;

associating each non-leaf node with a corresponding set of keys wherein each key in said corresponding set of keys further corresponds to at least one child node of said non-leaf node; and

providing each leaf node with a related set of keys, wherein said related set of keys includes each key associated with each non-leaf node on said corresponding path from said leaf node to said root node wherein said corresponding set of keys associated with each non-leaf node includes 2^m-1 keys where *m* is the maximum number of child nodes that may be associated with each non-leaf node.

Claim 3 (Currently Amended). A method for storing and updating information in a network having *n* hierarchical levels, said method comprising the steps of:

defining a root node positioned in a first of said levels, said root node having no parent node and at least one child node;

defining at least two leaf nodes positioned within ~~in~~ an *n*th of said hierarchical levels, each of said leaf nodes having a parent node and no child node;

defining a corresponding path between each of said at least two leaf nodes and said root node;

associating each non-leaf node with a corresponding set of keys wherein each key in said corresponding set of keys further corresponds to at least one child node of said non-leaf node; and

providing each leaf node with a related set of keys, wherein said corresponding set of keys associated with each non-leaf node includes 2^m -2 keys where *m* is the maximum number of child nodes that may be associated with each non-leaf node.

Claim 4 (Currently Amended). A method for storing and updating information in a network having *n* hierarchical levels, said method comprising the steps of:

defining a root node positioned in a first of said levels, said root node having no parent node and at least one child node;

defining at least two leaf nodes positioned within ~~in~~ an *n*th of said hierarchical levels, each of said leaf nodes having a parent node and no child node;

defining a corresponding path between each of said at least two leaf nodes and said root node;

associating each non-leaf node with a corresponding set of keys wherein each key in said corresponding set of keys further corresponds to at least one child node of said non-leaf node; and

providing each leaf node with a related set of keys, wherein said related set of keys provided to each leaf node includes (n-1)*(2^m -1) keys where *m* is the maximum number of child nodes that may be associated with each non-leaf node.

Claim 5 (Currently Amended). The method of claim ~~1~~ 2 wherein each non-leaf node is associated with more than two child nodes.

Claim 6 (Currently Amended). The method of claim ~~1~~ 2 wherein each non-leaf node is associated with the same number of child nodes.

Claim 7 (Currently Amended). The method of claim ~~1~~ 2 further comprising the step of defining an internal node positioned on said corresponding path between said root node and a first of said leaf nodes, said internal node being associated with a hierarchal level between said first level and said *n*th level.

Claim 8 (Currently Amended). The method of claim ~~1~~ 2 further comprising the step of identifying a specific one of said leaf nodes as a compromised leaf node.

Claim 9 (Currently Amended). The method of claim ~~1~~ 8 further comprising the step of removing at least a portion of said corresponding path ~~between~~ associated with said compromised leaf node.

Claim 10 (Original). The method of claim 8 comprising the step of marking a key in said set of keys related to said compromised leaf node as a compromised key.

Claim 11 (Original). The method of claim 10 further comprising the step of sending a message from said root node to a non-compromised leaf node using a key that has not been marked as a compromised key.

Claim 12 (Currently Amended). The method of claim ~~1~~ 2 further compromising the step of identifying each of one or more specific leaf nodes as a compromised leaf node.

Claim 13 (Original). The method of claim 12 further compromising the step of removing at least a portion of said path between each of said one or more compromised leaf nodes and said root node.

Claim 14 (Original). The method of claim 12 further comprising the step of marking a key in said set of keys related to each of said one or more compromised leaf nodes as a compromised key.

Claim 15 (Original). The method of claim 14 further comprising the step of sending a message from said root node to a non-compromised leaf node using a key that has not been marked as a compromised key.

Claims 16-20 (Cancelled).

Claim 21 (New). The method of claim 3 wherein each non-leaf node is associated with more than two child nodes.

Claim 22 (New). The method of claim 3 wherein each non-leaf node is associated with the same number of child nodes.

Claim 23 (New). The method of claim 3 further comprising the step of defining an internal node positioned on said corresponding path between said root node and a first of said leaf nodes, said internal node being associated with a hierarchal level between said first level and said *n*th level.

Claim 24 (New). The method of claim 4 wherein each non-leaf node is associated with more than two child nodes.

Claim 25 (New). The method of claim 4 further comprising the step of defining an internal node positioned on said corresponding path between said root node and a first of said leaf nodes, said internal node being associated with a hierarchal level between said first level and said *n*th level.